

# Speedy Copilot for ToLiSS

Speedy Copilot makes CM2 & Pilot Monitoring items, when you are Captain acting Pilot Flying .

The Flight Crew Operating Manual of the Airbus makes a clear separation between actions from the left hand seat and the right hand seat. With this plugin designed for FlyWithLua, you endorse the role of the captain and Pilot Flying. The purpose of the plugin is to automate First Officer actions per the Airbus FCOM.

We hope to provide a simple solution yet powerful and freeware.



**Meet First Officer Phoebe and Evelyn, the purser.**

or



**Share tasks with the First Officer Ben and the purser Libby !**

or



**Fly with First Officer Xavier and Purser Céline.**

It was tested with the following software :

- X-Plane 11.55 – X-Plane 12.1.2 ;
- FlyWithLua NG 2.7 and FlyWithLua NG 2.8 on Windows and Ubuntu ;
- ToLiSs A319 1.8 ;
- ToLiSs A320 ;
- ToLiSs A321 1.5 ;
- ToLiSs A330-900 1.0 ;
- ToLiSs A340-600 1.2.1 ;

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# How to use Speedy Copilot for Toliss

The copilot is doing the FCOM *procedures (not checklists)*. At the end of each procedure, we suggest that you run on your own the according checklist. Please see in the table below how to sequence the procedures.

<u>PRELIMINARY COCKPIT PREP</u>	In the ISCS, <b>call external power</b> .
PRELIMINARY COCKPIT PREP after park.brake ↪	Verify <b>Parking Brake set</b> to continue
<u>COCKPIT PREPARATION</u>	Request with <b>on-screen action</b> . While you do the ext. walkaround, the FO will become PF for the time of this procedure.
	Secondary on-screen action : <b>select TO FLAPS</b>
<u>BEFORE START / START CLEARANCE RECEIVED</u>	on-screen action
⌚ Engines start monitoring	Automatic.
<u>AFTER START</u>	ENG MODE selector.....NORM
<u>TAXI flow until flight controls check</u>	<b>Taxi light ON.</b> (By the user as CM1).
TAXI flow after flight controls check ↪	<b>Perform flight controls check.</b> Roll, Pitch and Yaw.
	Cabin crew must signal "cabin ready".
<u>BEFORE TAKEOFF (with "CABIN READY")</u>	Since the 2021 Airbus procedures, <b>Landing lights ON</b> <b>Quick glance</b> at both approach path and runway stay available as an alternative trigger.
⌚ TAKEOFF ROLL	Detects acceleration then monitors speeds, automatic
⌚ TAKEOFF gear and flaps retraction schedule	Automatic.
⌚ Flight 100 and CLIMB	Automatic.
⌚ Flight 100 and DESCENT	Automatic.
⌚ Approach, flaps extension schedule	Automatic.
⌚ GO AROUND (reversion to Takeoff above)	Detects high thrust and positive pitch, automatic.
⌚ ROLL-OUT	Detects deceleration, automatic.
<u>AFTER LANDING</u>	<b>Ground spoilers disarm</b> when away from RWY.
Apron entry (lights and doors), optional	Request with <b>on-screen action</b> (2 min after landing)
PARKING procedure until turn around state	<b>Parking brake ON, engines OFF, BEACON light OFF.</b>
End of leg, preparation for next leg	Open the Options menu. Press " <b>NEXT LEG</b> ".

PF actions trigger the PM duties. The "Securing the aircraft" procedure is not scripted.

# Installation

## Main component

1/ Please install FlyWithLua first. Speedy Copilot works with “[FlyWithLua 2.7 NG](#)”. Or “[FlyWithLua 2.8 NG](#)”.

2/ Extract the Speedy Copilot for ToLiss archive content on top of previous files in the following folder :

`\X-Plane 11\Resources\plugins\FlyWithLua\Scripts\`

or

`\X-Plane 12\Resources\plugins\FlyWithLua\Scripts\`

At the end of the installation you should obtain the following hierarchy :

`Resources\plugins\FlyWithLua\Scripts\Speedycopilot_for_Toliss_options.lua`

`Resources\plugins\FlyWithLua\Scripts\Speedycopilot_for_Toliss_script.lua`

`Resources\plugins\FlyWithLua\Scripts\Speedy_Copilot_for_ToLiSs\Documentation`

`Resources\plugins\FlyWithLua\Scripts\Speedy_Copilot_for_ToLiSs\sounds`

`Resources\plugins\FlyWithLua\Scripts\Speedy_Copilot_for_ToLiSs\sounds_Ben_FO_Libby_Purser`

`Resources\plugins\FlyWithLua\Scripts\Speedy_Copilot_for_ToLiSs\sounds_Phoebe_FO_Evelyn_Purser`

`Resources\plugins\FlyWithLua\Scripts\Speedy_Copilot_for_ToLiSs\sounds_Xavier_FO_Celine_Purser`

If you are updating, it's better to remove completely previous editions in the FlyWithLua scripts directory first.

## Automatic ground handling with Simple Ground Equipment and Services (optional)

Speedy Copilot is also integrated with Simple Ground Equipment and Services, when SGES is installed and JAR's Ground Handling Deluxe not selected in the options.

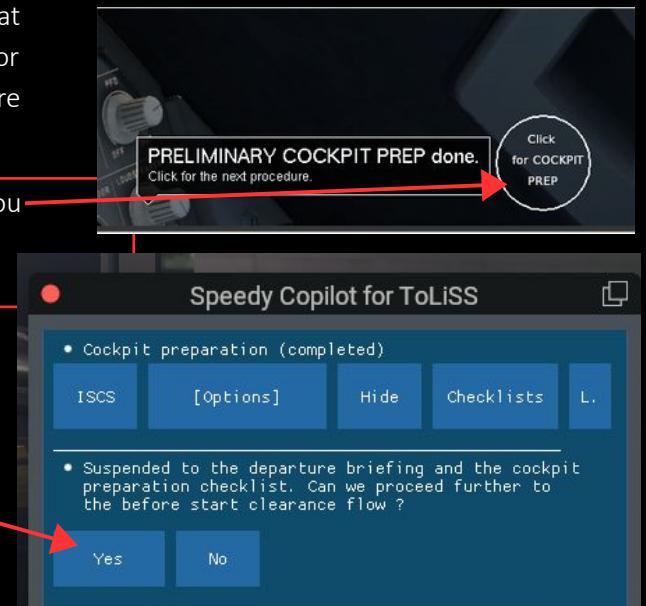
<https://forums.x-plane.org/index.php?/files/file/62296-simple-ground-equipment-services-low-tech-ground-services/>.

# Actions triggers

When Speedy copilot is active, some messages will be shown at the bottom of the screen during the progress of the flight. For instance a welcome message is displayed a few seconds before being automatically erased.

Some events must be triggered with **on-screen actions**. You must click inside the circle or in the box in order to start the next procedure.

A variant of the onscreen action is available when the user has chosen to display a windowed menu bar ("VR" option). You can answer yes to have a similar action than the click-to-action circle/box.



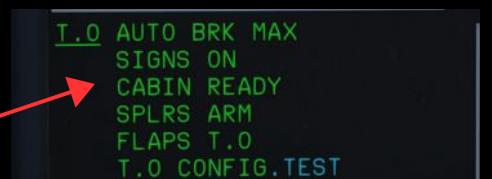
## Prepare the FO for flaps-3

You can tell in advance to your F.O. that a **FLAPS 3 landing** is planned by configuring the overhead GPWS switch to FLAPS 3 LDG during the descent.

## Cabin Ready

During the taxi to take off runway, the flight attendants have to report "Cabin Ready" to the cockpit crew. In modern variants or retrofitted aircraft, there is a touchscreen in the cabin, namely the Flight Attendant Panel, which is used to signal "Cabin ready" to the captain. This flat display is part of the Cabin Intercommunication Data System (CIDS).

This indication is then reported on the ECAM. When the "Cabin Ready" button is pressed on the flat display in the cabin, the ECAM line "CABIN READY" becomes green, and the Take Off test can be achieved.



With Speedy Copilot, the cabin crew will report "cabin ready" both **vocally on the interphone and with the CIDS**.

*If you want to hear the interphone report, you need the cabin interphone to be ON and its volume up.*

Cabin duties are simulated, do not expect the cabin to be ready in a few minutes. The time required to secure the cabin is variable and depend on time of the day and number of passengers.

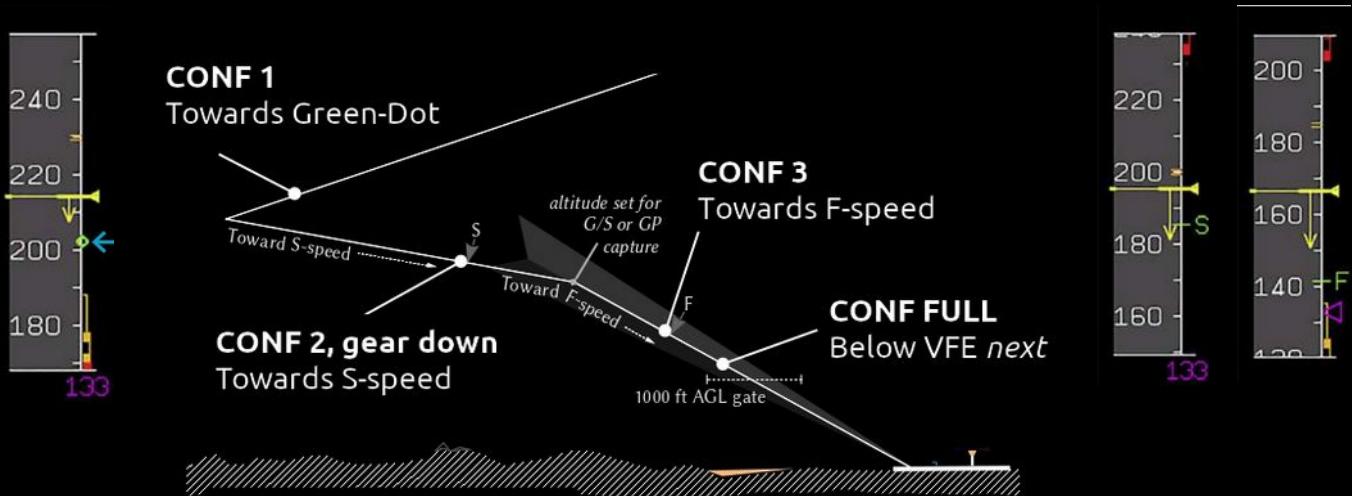
## Synchronized Flight Directors

The opposite side FD is synchronized with yours. Available as an option.



# Flaps schedule

If you have set the option **The PM sets FLAPS and moves the GEAR handle.** in the settings menu, then the copilot will act on flaps and gear during takeoff and approach, as if he was acting under your command. In reality, the action is triggered by the speeds found on the primary flight display (PFD).



During the approach, simply manage the aircraft speed and attitude. The PM will naturally **deploy flaps and slats in response to the deceleration**.

The picture above shows that when your aircraft is approaching :

- Green Dot, CONF 1 is selected ;
- S-Speed, CONF 2 is selected ;
- F-Speed, CONF 3 is selected.

In theory your FO is conservative and you should be always below the  $V_{FE\ NEXT}$  at the time of each next flap deployment<sup>1</sup>. If the copilot is a little late to your opinion in a specific situation, **you don't necessarily have to wait for him**.

*You can also take over and deploy manually yourself the flaps and gear to smooth things in regard to your local conditions, even if the script is running.*

On the other hand, if you want to **delay flaps extension** you can go to *speed selected* and keep above green dot, S or F speeds.

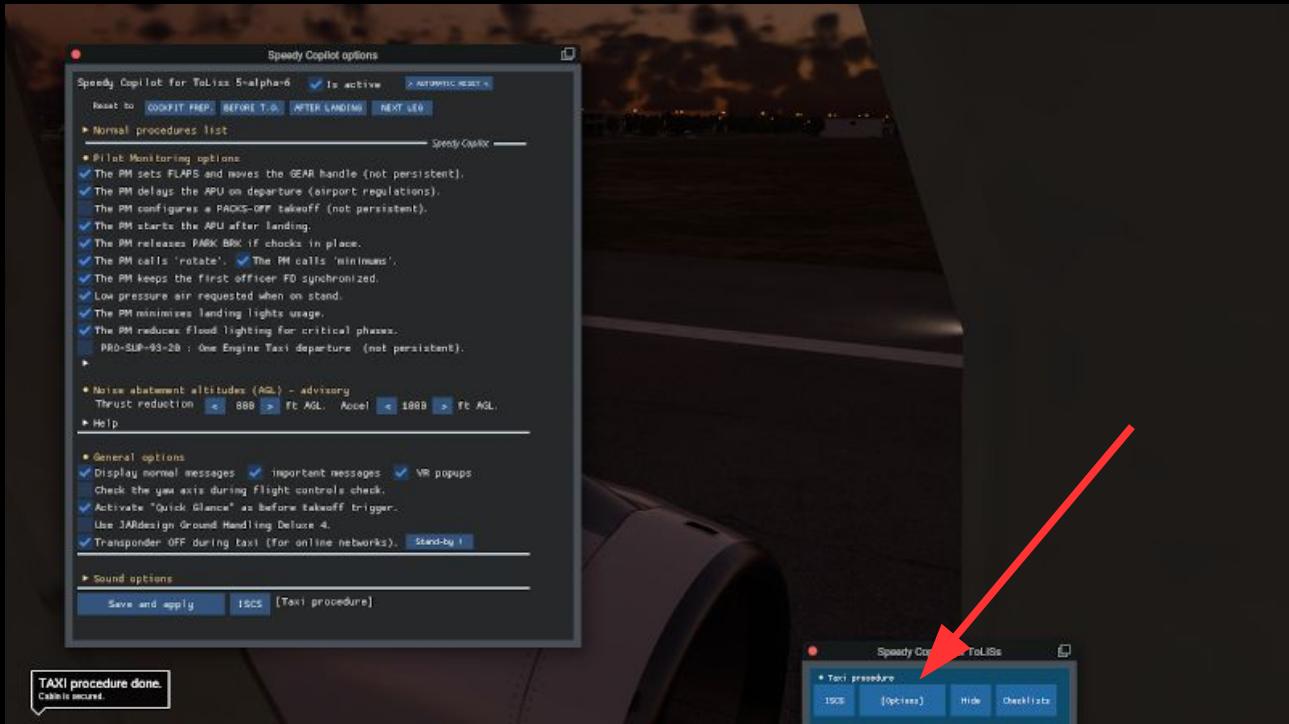
In some editions of Speedy Copilot we use a flaps table hard encoded into our code, in other editions like here in Speedy Copilot for ToLiss, we take **the speed values computed from the FMGS** in real time.

During the climb phase, we also take into account the reduction altitude, acceleration altitude, S and F speeds.

<sup>1</sup>  $V_{FE}$  is the maximum speed with the slats or flaps extended. Therefore The aim of the  $V_{FE\ NEXT}$  is to remind the flight crew the maximum speed at which they can extend the next Slats/Flaps configuration during approach.

# Options

Speedy Copilot for ToLiSs features two elements pictured below : the bottom bar and the options menu.



Bring your mouse near the bottom of the screen to pop up the bottom bar.



The bottom bar can help showing the ToLiSs ISCS, show the **options** menu, hide Speedy Copilot for ToLiSs messages on the your screen or display the checklists.

Remember that Speedy Copilot for ToLiSs does not do the checklists. It does the memory flow, or procedures. You can display the checklists to ensure compliance to standards in the operation of the airplane.

You can also move the bar to the left, instead of bottom, of your screen, with another bottom (not shown here).

*All options are explained directly in the menu, when you maintain the mouse click down on an option. The help will appear next to the mouse pointer. Worths noting the two following options :*

● **Speedy Copilot is active.**

Checkbox. By default active.

Turn ON/OFF the PM and the flight following.

▲ Speedy Copilot will be reset when turned ON.

● **AUTOMATIC RESET**

Click button.

The copilot is automatically reset to detected flight phase, as much as we can do from the sensed attitude of the aircraft. Manual reset buttons to a precise procedure are also available and recommended.

# Compatibility with animated jetways (Autogate)

Usually when chocks are in place, parking brake is released. On the other hand in X-Plane animated jetways made with the **AutoGate plugin** will be attached to the aircraft only if the parking brake is set. At anytime, on ground or on flight, you can tell the Pilot Monitoring to refrain touching the PARK BRK handle when chocks are set using the following option in the menu : ● The PM releases PARK BRK with chocks

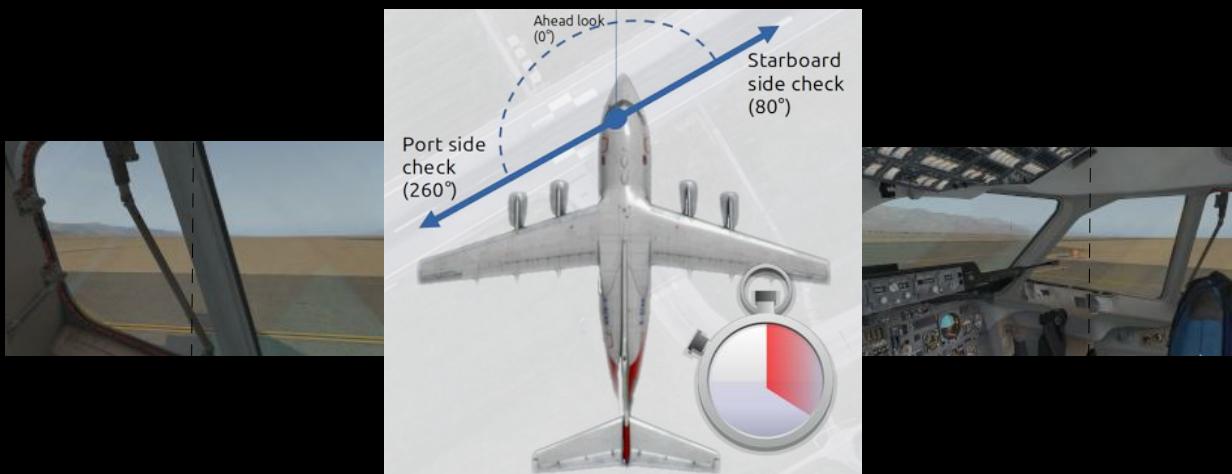
# Compatibility with BSS sounds

- Mute cabin PA related sounds When you mute cabin PA related sounds (not persistent, meaning it is not saved session after session) you will not hear the flight attendants announcements while in the cabin, nor will you hear the boarding music. That can simulate a ferry flight without passenger, or let other add-ons (like BSS) play those kind of sounds.

# Before takeoff “Quick Glance” trigger

Once the PM has obtained line-up clearance, the PF (the human user) will confirm the takeoff runway and intersection, collaboratively check with the Pilot Monitoring the approach path clear of traffic, and set the exterior lights for takeoff.

Once the taxi procedure is finished, we monitor your head direction. Before the 2021 renovated procedure applied, to begin the takeoff, you **moved your head** towards both port side and starboard side, in any order but **within 5 seconds**<sup>2</sup>. Directing your look towards the two areas would have triggered the runway entry flow.



That behavior is still available as an option, as you can report the landing lights duty on your first officer if you wish.

After 2021 however, the trigger is **setting a landing light on** (the job of the PF since the 2021 Airbus changes in the procedures).

2 If you look at the two directions successively in an elapsed time longer than this few seconds, Speedy Copilot will not recognize this as the runway and approach check behavior. This is done to avoid (or at least limit) false runway entries during taxi.

# Cabin crew

Cabin crew is handled by Speedy Copilot for ToLiss without user intervention according to phase of flight.

You can listen to the cabin Passenger Address (PA) and inflight entertainment when you explore the cabin.

UNLOCK the cockpit door to jump into a passenger seat.



Since Speedy Copilot for ToLiSS 6.1 (January 2023) you can also hear the passenger announcements made by Speedy Copilot for ToLiSS with the "PA" reception knob out and activated on any audio control panel (ACP).



According to the FCOM, when the PA reception know is active, the messages go to the loudspeaker. So ensure both the PA volume (on the ACP) and the Captain loud speaker volume (on the front panel) are up.



INT, CAB, HF, PA receptions knobs also works in the Digital Radio and Audio Integrating Management System (DRAIMS) which received EASA certification in March 2020 for the A320 Family.

# Updates

## Version 1 from 2019-08-09

First release based on a 2019 edition of Speedy Copilot 320 for the Flight Factor A320.

## Version 5 from 2022-08 to 2022-10 (2021 AIRBUS standard operating procedures)

- All Toliss airbus were updated so we needed to check compatibility
- X-Plane 12.00 beta was published, so we needed to code new stuff for compatibility.
- Old parts of the code were considered deprecated and were removed.
- Introduced another progress and sequence mechanism more suited to VR users.
- **Airbus introduced at the end of 2021 new standard operating procedures and new checklists.** We checked everything and coded again what needed to be coded again.
- Written a full explanation of the 2021 Airbus procedures and checklists in a new separate manual.
- Simplified the main manual with less information.
- Many hours of quality checks.

## Version 6 from 2023-01-07

- Quality improvements : color of the font in the menu caused a crash on XP11
- Quality improvements : GUI functions caused a crash for an user
- Quality improvements : offer a second location for the bottom bar
- Quality improvements : answering “no” to an option temporary closes the question
- Code housekeeping, cleaned the speed messages on approaching
- Very slightly delayed A321 Neo XLR body landing lights extinction in climb, they don’t add drag.
- An option on screen to make the first officer request and insert the FLEX take off performance via AOC (requires the January 2023 version of ToLiSS aircraft to actually request the performance)

## Version 6.1 from 2023-01-13

- Pictures inside the menu caused a FlyWithLua crash for some users. [Removed now]
- The landing light couldn’t trigger the takeoff flow in the A340-600, only the quick glance trigger (glancing left and light) could. [Repaired]
- Passenger Address receiver knob (PA) on any audio control panel (ACP) now makes the passenger address messages audible in the cockpit.

## Version 6.2 from 2023-01-13

- Sounds weren’t correctly played in XP12, FWL2.8. [Converted everything to stereo – all sound files changed !]
- INT and CAB reception knobs now handled.

## Version 6.3 from 2023-01-20

- New option to activate or deactivate the jump to the cabin via the cockpit door lock switch.
- New FlyWithLua option to totally hide the bottom bar (in the FlyWithLua menu).

## Version 6.4 from 2023-01-21

- A320 CG and Trim position added in the code to support the upcoming ToLiSS A320 Neo during the First Officer preflight.

## Version 6.4 from 2023-01-21

- A320 CG and Trim position added in the code to support the upcoming ToLiSS A320 Neo during the First Officer preflight.

## Version 6.5 (not released)

- updated temperature\_ambiant\_c to sim/weather/aircraft/temperature\_ambient\_deg\_c for X-Plane 12

## Version 6.6 from 2023-11-19

- access to livery\_path dataref updated for X-Plane 12.0.8

## Version 7.0 from 2024-10-13

- Initial support for ToLiSs A330-900 Neo
- TO TRIM to CG scale improved for the A340-600, and defined for the A330-900 (as the FO sets that value in the MCDU)
- Preflight procedure timing adjusted
- New option to prevent the First Officer to set up the MCDU
- More compatibility with others Lua scripts (allows cohabitation with ice\_simulator.lua)
- Sounds repaired
- Added an option to make the bottom bar solid instead of transparent

## Version 7.1, the 14th of October, 2024

1. Different pilot monitoring calls at before clearance and at before start steps.
2. New datalink ATC communication monitoring by the pilot monitoring (when Hoppie ACARS CPDLC is used).
3. New option for the PM to silence by himself the ringing of incoming ATC MSG. (on the go option, ie not saved between flights, false by default).

## Version 8.0, the 15th of October, 2024

### Major rework

1. Complete new set of sounds
2. Please welcome the First Officer Phoebe, acting Pilot Monitoring
3. Meet Evelyn the purser, acting lead cabin crew
4. More sounds to signal APU start, or other events
5. Flight control checks enforced
6. Predictive windshear switch (PWS) under CM2 control
7. Reverser datarefs adjusted for the ToLiss widebodies
8. Rejected takeoff better handled
9. Cabin, service interphones, PA and loud speaker audio level adjusted to comply with the ToLiss widebodies
10. Cabin audio level and PA audio level now adjustable on the ACP directly on both narrow and wide bodies.
11. ToLiss widebodies : cockpit door has an influence on the propagation of the cabin sounds
12. Shutting down taxi lights while rolling into the gate can now be passed to the CM2 (fix)
13. HF1 radio emulated (easter egg)

## Version 8.1, the 15th of October, 2024

- Two crews can man the aircraft with either Phoebe the FO or Ben the FO.

## Version 8.2, the 15th of October, 2024

- Restored the original pace of the procedures. The first officer isn't any more a robot. The new pace is the pace Speedy Copilot always had in the past. I happened to change os.time() for os.clock() in the history of the code, and that wasn't a good idea because the flows were conducted at an inhumain speed. I'm back to os.time() to sequence everything, and that is more realistic, and better offer the user (you) the time to do his own stuff on his side of the task sharing.

- Update to 2 sound files.

**Version 9, the 16th of October, 2024**

- Fixed a critical bug crashing flywithlua (wrong dataref)
- Interface : bigger fonts for message display
- Reviewed the cockpit preparation procedures pace (fine tuning).
- Cockpit preparation flow, when done by the Pilot Monitoring, now always includes requesting AOC TO PERF UPLINK data (but of course you can overwrite manually later if the FMGS wasn't ready at that time).
- Adjusted accurate values of cockpit to cabin wall location for all aircraft in the ToLiSs range
- Don't try to open the door on narrowbodies (mitigates Boarding music problems)
- Code contraction (200 lines of code saved at same functionnality level)
- Tests if X-RAAS 2 is installed, if yes, makes mention of it in the options menu.
- Added one sound
- Restored clearly visible separator lines between the on-screen checklists
- Restored the function of the reset button to the "MCDU input" step.
- Allows the PM to intervene more early than before in the PERF APPR page in approach if the PF hasn't set anything (destination tower wind empty). (Don't worry, it doesn't prevent you to set the page with correct or better values !)
- SGES : Added control on rear SGES stairs.
- SGES : passenger bus is not dissmissed too early any more (deboarding step)
- Cabin interphone code adjusted again.
- Quality check, lots of testing done.

**Version 9.1, the 18th of October, 2024**

- critical error fixed (big\_bubble 50), which was crashing everything below FL100 in descent
- clickable triggers code rationalized
- clickable on-screen triggers renovated and magnified.
- new dataref to sense the correct ZFW CG from the ISCS for the INIT B page
- TO CG-to-TRIM scale adjusted for the PM input in the FMGS
- TRIM setting by the FO now more accurate on A319,320,321
- some new sounds added
- simplified S-Speed and F-speeds on-screen messages in approach to avoid confusion
- crosschecked PM behavior regarding flaps.
- New option for the user to save the preferred crew (Phoebe or Ben)
- That was tough, the script is sensitive to evolution. Code renovation can quickly provokes errors elsewhere in the code, so that was not easy but I don't have knowledge of any errors remaining in version 9.1. I just have to check with the A330 Neo and that should be good. I believe version 9.1 is a true landmark in the history of the script now.

**Version 9.2, the 19th of October, 2024**

- Solved a FlyWithLua crash when requesting Speedy Copilot options menu from the top X-Plane menu (something I rarely do, as I use the bottom bar always). (a single supernumerary bracket was the cause).
- New crew, Xavier the First Officer, and Céline the Purser.

**Version 9.2b, the 19th of October, 2024, 10H00 UTC**

- Solved FlyWithLua crash with Airbus A330-900 Neo.

Version 10, the 21th of October, 2024

- Supports the A330-900 Neo.
- > Handle all of the A330-900 Neo fuel pumps.
- > Enabled the One Engine Taxi Out procedure for the A330 Neo, ignition switch, yellow elec pump.
- > **Prevent a FlyWithLua crash** with the One Engine Taxi Out procedure for the ToLiSS widebodies.
- > Tested in flight in the ToLiSS A330-900.
- > Mitigate successfully the ToLiSS APU start problem (known and reported) after landing by waiting more when the aircraft type is A330 Neo.
- > Minor change to seat belts sign detection.
- INIT B ZFW, ZFWCG, BLOCK FUEL insertion reworked behind the scene (cockpit preparation procedure) to pass on the A330 Neo (applies to all aircraft models).
  - Offer users with ToLiSS model versions not yet including ISCS datarref to run the script anyway, with an approximated ZFW CG. (**Prevent a FlyWithLua crash**)
  - Restored the originally intended steps and pace to switch ON the fuel pumps on the overhead (cockpit preparation procedure).
  - Prevent your baby from waking up : new option to automatically enable external view during APU and engine fire tests to prevent startling nearby sleepers with loud master cautions alarms.
  - Augment the preliminary cockpit preparation procedure with more audible feedback.
  - Skip the APU fire test if the user has already started the APU (preliminary cockpit preparation procedure).
  - Prevent unwanted AOC PERF request during runway line-up. Limited any AOC requests by the Pilot Monitoring before engines start.
  - The CM2 clears his MCDU scratchpad after an unsuccessful PERF TO uplnk attempt.
  - Streamlined the One Engine Taxi Out procedure.
  - **Prevent a FlyWithLua crash** when loading the function powering the on-screen messages too early at startup.
  - Prioritized the loading of the datarrefs in an attempt to help users having some FlyWithLua crash at startup due to datarref being nil.
  - Updated weather and controls datarrefs to X-Plane 12 new standards : sim/weather/aircraft/barometer\_current\_pas, sim/cockpit2/controls/flap\_handle\_request\_ratio
  - Main manual updated in the "Documentation" folder.
  - Many hours of testing (only in X-Plane 12, only with the latest versions of all ToLiSS models)

Version 10.1, the 23th of October, 2024

Miniature update with just the specific seat belts sign of the A330-900 Neo actuated to the ON position in descent, instead of AUTO.

Restore "DECEL" and "SEVENTY KNOTS" call out on landing, on top of REVERSE GREEN and SPOILERS.

Version 10.2, the 26th of October, 2024

Block flight attendant duties below 6000 feet

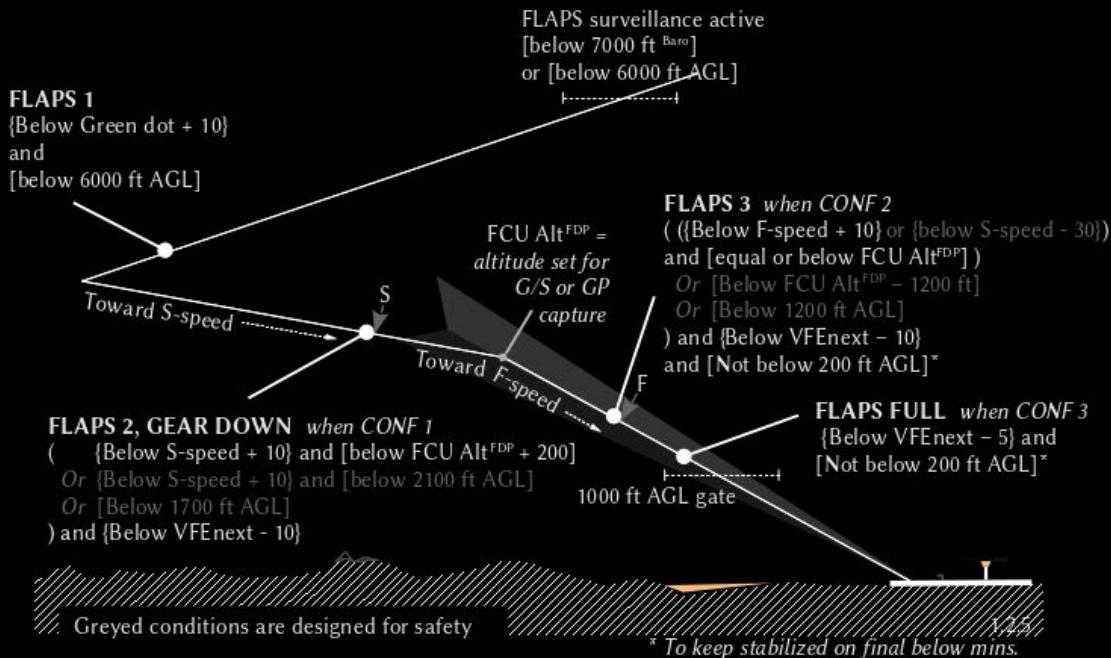
Code review in the sound department. Prevent 3 FlyWithLua crashes when loading Speedy Copilot without secondary sounds (an old, hidden option).

Version 10.3, the 28th of October, 2024

Allow Egyptian and Australian voice packs.

# Q. & A.

**Q.** What altitude and speed will begin the flaps extension on approach?



**Answer.** The above picture described the Speedy Copilot for ToLiss mechanism.

**Q.** How to tell the copilots to set FLAPS 3 for landing (instead of FLAPS Full) ?

**Answer.** You can tell to F/O that a **FLAPS 3 landing** is planned by configuring the overhead GPWS FLAPS 3LDG switch to ON during the descent preparation !

**Q.** How to operate the navigation lights?

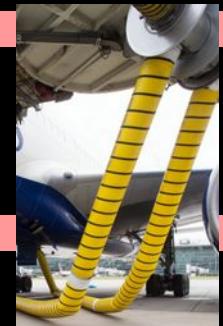
**Answer.** It's perfectly fine to put them ON when you board the aircraft and power it up at the beginning of the PRELIMINARY PREP. At the latest you should have them on during the COCKPIT PREP, because, after all, it is a preflight procedure. "EXTERIOR LIGHT ..... AS RQRD" is an item of the cockpit prep : it's done by the PF at that time which is the FO because the captain is doing the ext. walkaround. Regarding the beacon, the first Officer will put it to ON before engine start. However, you can takeover at any time, if you prefer to have the beacon ON a little earlier. It won't hurt. To start the before pushback sequence, you have to press the INT microphone button or the external electrical source button on the overhead regardless of your beacon state.

**Q.** I requested low pressure refrigerant air but it doesn't work !

**Answer.** It is not because it is requested that the ground crew will provide it. Please wait for ideal environmental conditions which allow LP connection (*Image courtesy of your.heathrow.com*).

**Q.** Can we have spelling tasks while accomplishing ?

**Answer.** It's not realistic and it's noisy !



**Q.** Can we do Pack OFF takeoffs ?

**Answer.** Yes, out of the box. There is no configuration menu for it. The F/O will naturally put the Pack ON after takeoff. Still, it will be your responsibility to deactivate one or both packs before takeoff, as a simplification.

**Q.** Every time the PM finishes his after start flow, it seems stopped. How can I pass this ?

**Answer.** The PM does indeed the after-start procedure (ground spoilers, flaps, ECAM door page). You should perform the after-start checklist on your own at this point. Then, the very first item of the PF flow is to put the taxi-light ON. The PM will keep silent, but that triggers the taxi flow for him. One of the significant item that comes next is the flight controls check (see the QRH "taxi procedure").

**Q.** How to pass the flight control check ?

**Answer from JackZ @ x-plane.org.** To start the FCTL CHECK sequence, slightly move the stick, then follow the below routine (at a slow pace, but ensuring you reach full deflection each time), with a 1 sec pause between each movement :

1-FULL UP (stick full aft), FULL DOWN,NEUTRAL (Stick released)

2-FULL LEFT, FULL RIGHT, NEUTRAL

3-After depressing and maintaining presses the Rudder Disc Button which is located in the center of the tiller, select FULL LEFT (Rudder pedal Full left), FULL RIGHT, NEUTRAL. Then you may release the Rudder Disc

4- The F/O is then supposed to do the same check silently (side stick only)

Be advised that you have an option to disable the rudder FCTL CHECK (only the rudder check) for those not equipped with rudder.

**Q.** What do the acronyms CM1 and CM2 mean ?

CM is Crew Member. CM1 is the occupant of the left hand seat. CM2 of the right hand seat.

**Q.** The Ground handling comes out of sync sometimes. Can we solve this ?

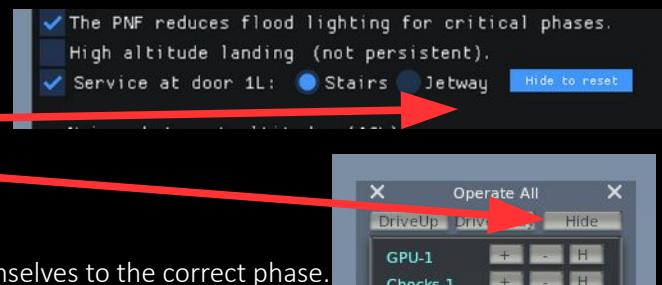
You can resync the ground handling in two clicks.

The method is to :

- 1) open the JARdesign control panel ;
- 2) click "Hide".

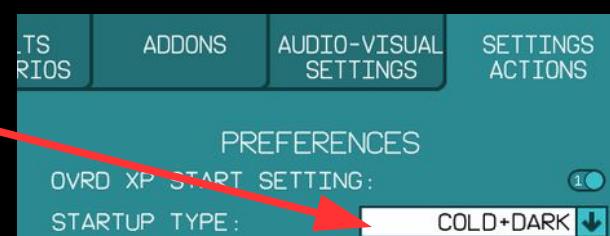
That's it !

The ground services should start to redispatch themselves to the correct phase.



**Q.** What is the recommended startup state ?

Speedy Copilot for Toliss was designed with Cold and Dark in mind, although it can work with all other startup types, from being in turnaround to having just landed on the runway !



# Media

The following sound tracks are included with Speedy Copilot 320.

Title : Journey's Reflection

Author : Darren Curtis

Source : <https://darrencurtis.bandcamp.com>, <https://www.auboutdufil.com/index.php?id=499>

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Title : Corporate Music

Author : Scott Holmes

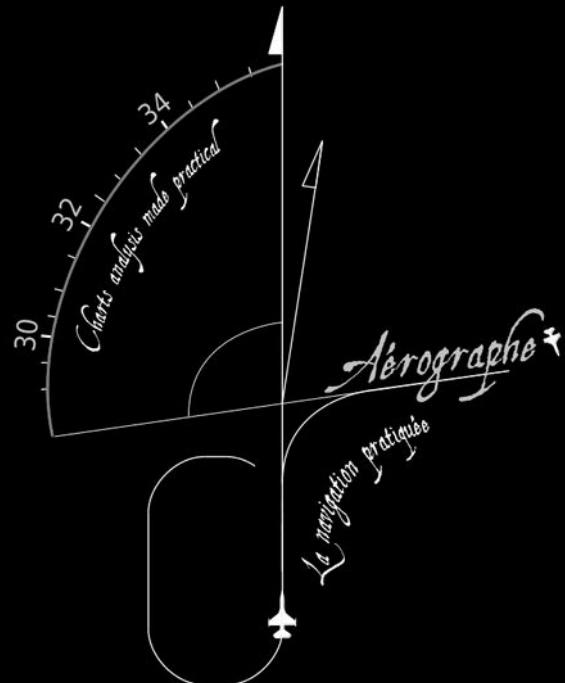
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# Producer

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Sequencing the procedures. -

Memo to print.

- ◊ PRELIMINARY COCKPIT PREP In the ISCS, call external power.
- ◊ PRELIMINARY COCKPIT PREP after park.brake ↪ Verify Parking Brake set to continue
- ◊ COCKPIT PREPARATION Request with on-screen action.  
While you do the ext. walkaround, the FO will become PF for the time of this procedure. Secondary on-screen action : select TO FLAPS
- ◊ BEFORE START / START CLEARANCE RECEIVED on-screen action
- ◊ Engines start monitoring Automatic.
- ◊ AFTER START ENG MODE selector.....NORM
- ◊ TAXI flow until flight controls check Taxi light ON. (By the user as CM1).  
Perform flight controls check. Roll, Pitch and Yaw.  
Cabin crew must signal "cabin ready".
- ◊ TAXI flow after flight controls check ↪
- ◊ BEFORE TAKEOFF (with "CABIN READY") Since the 2021 Airbus procedures, Landing lights ON  
Quick glance at both approach path and runway stay available as an alternative trigger.
- ◊ TAKEOFF ROLL Detects acceleration then monitors speeds, automatic
- ◊ TAKEOFF gear and flaps retraction schedule Automatic.
- ◊ Flight 100 and CLIMB Automatic.
- ◊ Flight 100 and DESCENT Automatic.
- ◊ Approach, flaps extension schedule Automatic.
- ◊ GO AROUND (reversion to Takeoff above) Detects high thrust and positive pitch, automatic.
- ◊ ROLL-OUT Detects deceleration, automatic.
- ◊ AFTER LANDING Ground spoilers disarm when away from RWY.  
Request with on-screen action (2 min after landing)  
Parking brake ON, engines OFF, BEACON light OFF.
- ◊ Apron entry (lights and doors), optional
- ◊ PARKING procedure until turn around state
- ◊ End of leg, preparation for next leg Open the Options menu. Press "NEXT LEG".